REMARKS

The claims have been amended to be directed to the elected subject matter. All rights to pursue the nonelected subject matter via one or more divisional applications is preserved. Claims 23-25 have been added and are also directed to the elected embodiment and includes an isolation step. Claims 21 and 22 have been withdrawn.

Applicants elect Group VII, the species of "step K" with traverse. Claims 1-19 and 23-25 read thereon (none of the claims preclude a process comprising step K).

The Examiner has restricted among the methods of producing libraries within Claim 1. It is not clear from the restriction precisely what distinguishes from each group or the invention (or scope of each claim) that the Examiner actually intends to examine or search.

The Examiner states that "the inventions listed in Groups I-VIII do not relate to a single general inventive concept under PCT Rule 13.1 because … groups I-VIII lack the corresponding special technical features as each of the groups recite different modifications that is recited in one group but not the other." Applicants do not understand the reasoning behind the restriction requirement.

Groups I-III. Group I is said to be directed to "a method for the production of a library of heparin sulphate derivatives." Group II is said to be directed to "a method for the production of a library of heparin sulphate derivatives with at least two modifications" whereas Group III is said to be directed to "a method for the production of a library of heparin sulphate derivatives with at least three modifications." Obviously, Group III is wholly embraced by Group II as a process which has "at least two modifications" necessarily embraces all processes that have at least three modifications. Obviously, Groups I and II are wholly embraced within Group I, which is directed to a method for the production of a library of heparin sulphate derivatives broadly. Thus, the special technical feature of Group III, a process with at least three modifications (as phrased by the Examiner) "is recited in" all three groups. The fact that Group II embraces some processes not also embraced within Group III (i.e., processes with two and only two modifications), does not justify a finding that the inventions lack unity of invention under the PCT.

With respect to the claims that are assigned to each group, it is respectfully pointed out that Claims 2-5 (assigned only to Group I) also embrace processes which fall within the scope of Groups II and III. That is, Claims 4 and 5 make clear in the use of the phrase "at least one" that a plurality of chemical modifications (including two, three or more) are literally contemplated and embraced.[1] In fact, the invention of Group I, *as articulated by the Examiner*, embraces all of the processes claimed in Claims 1-19. Thus, Applicants do not understand what process(es) would be searched and examined if Group I were to be elected. Accordingly, Applicants are hesitant to elect Group I, albeit that Group appears to be the most relevant and inclusive of the underlying invention of the Applicant.

Similarly, Applicants are confused by the restriction between Groups I-III, discussed above, and IV-VI. Groups IV-VI are said to be directed to "a method for the production of a library of heparin sulphate derivatives with the different combined modifications as recited therein." Again, Group I wholly embraces each of Groups IV-VI. Thus, the special technical feature of Group IV is within Group I and the Examiner's reasoning for the restriction is technically flawed. Group II wholly embraces Groups V and VI while Group III embraces Group VI. Likewise, Group V embraces Group VI and Group IV embraces Groups V and VI. In other words, Group I is generic to all of Groups I I-VI; Group II is generic to Groups III, V and VI and at least Claims 9-11 of Group IV; Group III is generic to Groups V and VI and at least Claims 10-11 of Group IV; Group IV is generic to Groups V and VI; and Group V is generic to Group VI. The restriction, at least as articulated, is actually a restriction between each genus and the next narrower or preferred subgenus or embodiment. It is not seen how the Examiner can rely upon Rule 13 of the PCT under the guidelines set forth in the MPEP in this situation. It is typical claiming practice to add dependent claims to recite one or more preferred embodiments of the claim above it. However, it is highly unusual to restrict between such claims.

Turning to Groups VII and VIII, again, as is apparent from the fact that Claim 15 is a dependent claim of Claim 1, and Claim 16 requires that the process of Claim 1 be

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[1] It is noted that Claims 6 and 7, assigned to Groups II and III, require that at least two of the steps are "partial modifications" whereas the articulation of the invention refers only to "modifications." Applicants are using the Examiner's terms in this reply for simplicity.

conducted, the inventions of these groups are also embraced by the invention of Group I. Indeed, the processes of Groups VII and VIII can be practiced in combination with the processes of each and every one of Groups I-VI. Thus, for the reasons set forth above with respect to the restrictions between and among Groups I-VI, the restriction between and among Groups I-VIII is improper.

With respect to the election of species, while the Applicants have elected the species of "step K," it is to be understood that the elected process includes processes that perform, in addition to step K, other steps. That is, nothing within this election should be construed as an acquiescence that the claimed process consists of step K. The elected claims are directed to processes which *comprise* step K. Thus, it is Applicants' belief that the elected species will include processes which combine step K with one or two or more additional complete or partial modifications[2], such as a modification to the amino functions of glucosamine (e.g., Claims 5-7), or steps A and K or B and K (e.g. claim 8, 10 or 11), *for example*. It is requested that, in the event that the claimed and elected processes, employing step K, are found to be patentable, that the search and examination be expanded to the generic invention.

The claimed process is directed to a unified strategy that brings together multiple chemical desulfation and modification steps to deliberately create structural diversity in the resulting products. This strategy can then be exploited to create libraries with access to regions of chemical space that are useful for screening purposes and to identify compounds with optimized activities. In contrast, previous approaches have used chemical desulfation to reduce structural diversity, thereby limiting access to novel chemical space, and with limited utility to screening or optimization.

The claims are directed to processes which perform a *combination* (i.e., a plurality) of steps and are not directed to processes comprising only a single chemical modification. If only a single chemical modification, or indeed a single fixed combination of multiple modifications, is employed, then only limited diversity can be introduced into the heparan template. This would dramatically limit the extent of

[2] In fact, step K describes two partial modifications and a complete modification and, itself, satisfies the limitation of at least Claims 6 and 7...

diversity of the library that can be produced. It is thus self-evident that this would defeat the whole object of the overall, unified strategy. However, it should also be apparent that it is not necessary to perform each and every step of the claimed process.

Furthermore, the claims also cover the application of the library generation process in an iterative manner for screening purposes (e.g., Groups VII and VIII), to identify compounds with optimized properties. If only a single or fixed combination of chemical modification steps were covered, then the concept of iterative, convergent screening to identify the most efficacious compounds which this strategy offers would be entirely lost, and this makes no sense.

Overall, Applicants believe the strategy described is based on a coherent set of generic approaches that are linked to form a single general inventive concept, namely a unified and flexible strategy for generating and screening novel libraries of chemically modified heparan-based compounds in an iterative manner, for selection of optimized leads. To restrict the modifications to single or a fixed combination is contrary to the overall strategy that underlies the invention.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned at (978) 251-3509.

Respectfully submitted,

ELMORE PATENT LAW GROUP, P.C.

/Carolyn S. Elmore/

By_____

Carolyn S. Elmore
Registration No. 37,567
Telephone: (978) 251-3509
Facsimile: (978) 251-3973

N. Chelmsford, MA 01863
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